

WHAT IS CLAIMED IS:

1                   1.       A method for testing a set of interface connections in a reconfigurable  
2 device between an IP core implementing at least one specialized operation and a set of  
3 functional blocks adapted to implement general-purpose logic devices, the method  
4 comprising:

5                   creating a test program including a set of test data and a test configuration  
6 adapted to configure the set of functional blocks to implement a set of boundary scan  
7 registers connected with the interface connections of the IP core;

8                   configuring the reconfigurable device according to the test configuration;

9                   inputting the test data into the reconfigurable device to create a set of test  
10 results; and

11                  analyzing the set of test results to determine the integrity of the set of interface  
12 connections.

1                   2.       The method of claim 1, wherein the set of boundary scan registers  
2 include a plurality of shift registers connected in series, wherein each shift register is adapted  
3 to be connected with an interface connection of the IP core.

1                   3.       The method of claim 2, wherein a first portion of the plurality of shift  
2 registers is adapted to be connected with a set of input interface connections of the IP core  
3 and a second portion of the plurality of shift registers is adapted to be connected with a set of  
4 output interface connections of the IP core.

1                   4.       The method of claim 1, wherein the test configuration is defined with a  
2 hardware description language representation.

1                   5.       The method of claim 4, wherein the creating a test program includes:  
2 combining the hardware description language representation of the test  
3 configuration with a hardware description language representation of the IP core to form a  
4 test hardware description; and  
5 analyzing the test hardware description to create a set of test data.

1                   6.       The method of claim 5, wherein creating a test program further  
2 includes analyzing the test hardware description and the set of test data to create a set of  
3 expected test results; and

4 wherein analyzing the test results includes comparing the set of test results  
5 with the set of expected test results.

1 7. The method of claim 5, wherein analyzing the test hardware  
2 description is performed using automated test program generation software.

1 8. An information storage medium including a set of instructions adapted  
2 to operate an information processing device to perform a set of steps, the set of steps  
3 comprising:

4 creating a test program including a set of test data and a test configuration  
5 adapted to configure the set of functional blocks to implement a set of boundary scan  
6 registers connected with the interface connections of the IP core;

7 configuring the reconfigurable device according to the test configuration;  
8 inputting the test data into the reconfigurable device to create a set of test  
9 results; and

10 analyzing the set of test results to determine the integrity of the set of interface  
11 connections.

1 9. The information storage medium of claim 8, wherein the set of  
2 boundary scan registers include a plurality of shift registers connected in series, wherein each  
3 shift register is adapted to be connected with an interface connection of the IP core.

1 10. The information storage medium of claim 9, wherein a first portion of  
2 the plurality of shift registers is adapted to be connected with a set of input interface  
3 connections of the IP core and a second portion of the plurality of shift registers is adapted to  
4 be connected with a set of output interface connections of the IP core.

1 11. The information storage medium of claim 8, wherein the test  
2 configuration is defined with a hardware description language representation.

1 12. The information storage medium of claim 11, wherein the creating a  
2 test program includes:

3 combining the hardware description language representation of the test  
4 configuration with a hardware description language representation of the IP core to form a  
5 test hardware description; and

6 analyzing the test hardware description to create a set of test data.

1                   13.     The information storage medium of claim 12, wherein creating a test  
2 program further includes analyzing the test hardware description and the set of test data to  
3 create a set of expected test results; and

4                   wherein analyzing the test results includes comparing the set of test results  
5 with the set of expected test results.

1                   14.     The information storage medium of claim 12, wherein analyzing the  
2 test hardware description is performed using automated test program generation software.

1                   15.     An information storage medium including a test configuration for  
2 configuring a reconfigurable device, the reconfigurable device having an IP core  
3 implementing at least one specialized operation and a set of functional blocks adapted to  
4 implement general-purpose logic devices, the test configuration comprising a configuration  
5 of the set of functional blocks implementing a set of boundary scan registers connected with a  
6 set of interface connections of the IP core.

1                   16.     The information storage medium of claim 15, wherein the set of  
2 boundary scan registers include a plurality of shift registers connected in series, wherein each  
3 shift register is adapted to be connected with an interface connection of the IP core.

1                   17.     The information storage medium of claim 16, wherein a first portion of  
2 the plurality of shift registers is adapted to be connected with a set of input interface  
3 connections of the IP core and a second portion of the plurality of shift registers is adapted to  
4 be connected with a set of output interface connections of the IP core.

1                   18.     The information storage medium of claim 15, wherein the test  
2 configuration is defined with a hardware description language representation.

1                   19.     The information storage medium of claim 15, further including a set of  
2 test data adapted to be input into the IP core via the set of functional blocks implementing the  
3 set of boundary scan registers.

1                   20.     The information storage medium of claim 15, further including a set of  
2 expected test results.